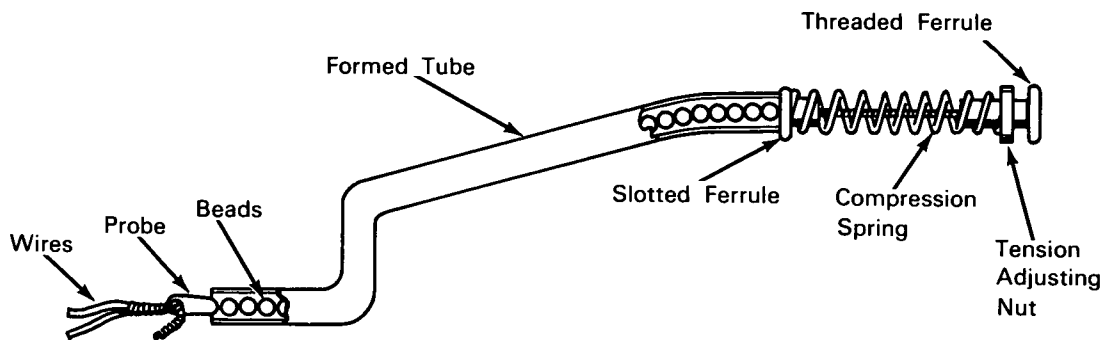


# NASA TECH BRIEF



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## Spring Loaded Beaded Cable Makes Efficient Wire Puller



**The problem:** Pulling wires or cables through formed lengths of pipe, tube, or conduit involving bends and elbows.

**The solution:** A beaded cable that is loaded by an adjustable spring tension for sufficient rigidity to permit its being forced through a pipe, tube, or conduit.

**How it's done:** A teardrop shaped steel probe with a hole in one end is fastened to a steel cable. The cable is strung with metal beads that are maintained in a compressed condition by an arrangement of spring loaded ferrules at the end of the cable opposite the probe. This end of the cable is fastened to a threaded ferrule on which a nut rides to adjust the tension on the compression spring. By adjusting the compressive force of the spring to force the beads together, the assembly is made more or less rigid so it may be pushed through a particular tubing run. The beads act as joints, assisting the cable in bending around corners or curves in the tubing and they reduce friction along the tube internal wall since they make point contact only. Kinking of the cable is not possible and considerable force may be safely exerted to overcome relatively sharp bends in the tubing. When the probe has

been forced through the tubing run, the wires to be pulled through the tubing are laced through the hole in the probe and the wire puller is withdrawn, the wires following.

### Notes:

1. By replacing the probe with a permanent magnet, the puller could be used to retrieve metal items in plumbing lines.
2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer  
Western Operations Office  
150 Pico Boulevard  
Santa Monica, California, 90406  
Reference: B65-10031

**Patent status:** NASA encourages commercial use of this innovation. No patent action is contemplated.

Source: North American Aviation Inc.  
under contract to Western Operations Office  
(WOO-108)

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